

# E-book Scenario in Malaysia Tertiary Education: A Case Study

P.F. Chong<sup>a</sup>, Y.P. Lim<sup>b</sup>, S.W. Ling<sup>c</sup>

<sup>a</sup>Faculty of Information Technology  
Multimedia University, 63100 Cyberjaya, Selangor  
Tel: 03-83125244, Fax: 03-83125264  
Email: pfchong@mmu.edu.my

<sup>b</sup>Faculty of Creative Multimedia  
Multimedia University, 63100 Cyberjaya, Selangor  
Tel: 03-83125620, Fax: 03-83125554  
Email: forest.lim@mmu.edu.my

<sup>c</sup>Faculty of Creative Multimedia  
Multimedia University, 63100 Cyberjaya, Selangor  
Tel: 03-83125540, Fax: 03-83125554  
Email: swling@mmu.edu.my

## ABSTRACT

*The advent of internet technology has made digital content widely accessible to everyone. However, previous studies showed that the uptake of e-books has been slow. This study attempts to investigate on the e-book usage of Multimedia University students. An online survey is conducted on 86 students to gauge their perception and acceptance of an e-book. Results showed that e-book usage is still not encouraging, where only 52.3% of the respondents have read an e-book. This paper sheds on some hardware and onscreen design factors that hinder the adoption of e-books in the institution.*

## Keywords

*Electronic book, e-book, electronic content, descriptive statistics*

## 1.0 INTRODUCTION

The electronic book (e-book) is one of the several forms of e-publications (Ramaiah, 2005). There are various definitions of e-book. Lemkem (1999) defines e-book as “a mobile, physical device to display electronic (i.e. digital) documents.” Borchers (1999) on the other hand, defines e-book as “a portable hardware and software system that can display large quantities of readable textual information to the user, and that lets the user navigate through this information.”

In addition to Borchers' (1999) definition of e-book, Henke (2001) includes the content itself in the definition of e-book, where e-book is defined as “hardware device, such as Softbook or Rocket eBook, that enables readers to view content; software applications, such as Acrobat Reader which are used to view content online; or the content that is viewed by a hardware device or software application.”

Despite the various definitions, the term “e-book” within this research is defined as “a book that is published in electronic form, for example on the Internet or on a disk, and not printed on paper” (Cambridge Dictionaries Online, 2007).

## 1.1 Formats of E-book

E-books are available in a variety of formats, such as Adobe Acrobat's Portable Document Format (PDF), Exe Book, Hyper Text Markup Language (HTML), image files, Microsoft Reader's Literature (LIT) and Rich Text Format (RTF), not to mention other formats used in certain countries such as China and Korea. Despite the variety of e-book formats, the most popular journal formats are either HTML or PDF (Hitchcock, Carr & Hall, 1997; Norshuhada, Landoni, Gibb & Hassan, 2003).

## 1.2 Advantages of E-book

While there are still debates on whether e-books can replace the traditional paper books, there are a number of advantages of using e-books over paper books. E-books do not require printing and shipping, thus can be distributed instantly (Long, 2003; Rao, 2004). This allows the users to begin reading the publications once it is released. Additionally, the titles that may be less cost-efficient get a chance to be published, as the printing and shipping costs are void (Borchers, 1999). It is also relatively inexpensive to update an e-book as compared to a paper book (Borchers, 1999; Ghosh, 2004; Long, 2003).

Other than the savings in production and maintenance costs, ebooks have no risk of book theft and tearing (Connaway, 2003; Ghosh, 2004; Rao, 2004), hence do not require replacement and repair costs. Besides, unlike traditional paper books, e-books can be shared by many

users simultaneously (Anuradha & Usha, 2005; Long, 2003). Thus, a library does not need to purchase multiple copies of the same title, and the users will not encounter situation where the titles are “lent out”.

E-books are also more portable and take up little space such that a number of e-books can be stored in a rather lightweight reading device that can be taken to any where any time (Anuradha & Usha, 2005; Bonime & Pohlmann, 1998; Borchers, 1999; Long, 2003).

Moreover, e-book content is more dynamic and interactive. It benefits from hyper linking such that users can refer to a particular piece of information or to access any section of an e-book at ease (Bonime & Pohlmann, 1998). Besides that, it allows users to search for information they are looking for (except when the information is presented as images), and the results could be stored and shared. These features also allow customization according to the users’ preferences and needs (Anuradha & Usha, 2005; Borchers, 1999; Long, 2003). For example, users can change the typeface and enlarge the font size to ease reading, and use the backlit device to read in low light or even total darkness.

Last but not least, an e-book is highly integrated with the multimedia elements, such as audio narration, background music, animations and videos that make the reading not only more interesting but ease understanding (Anuradha & Usha, 2005; Bonime & Pohlmann, 1998; Borchers, 1999; Long, 2003).

### 1.3 E-book Issues and Scenario

E-book popularity has been growing steadily over the past five or six years (Ramaiah, 2005). Charles Sturt University, a major provider of distance education, has taken up the challenge of moving away from the traditional print based method to electronic delivery of instructional material (Messing, 1995). Open University UK (OU) has also moved to an electronic paradigm in adopting the e-book as one of their primary learning materials.

In Malaysia, the Open University Malaysia (OUM) also followed the trend by providing a digital collection in addition to more than 8500 volumes of books in its main campus and learning centres nationwide. The university’s digital library provides access to more than 40,000 titles in e-books and 18,000 titles in e-journals respectively. Other than OUM, MMU, University of Malaya and Universiti Sains Malaysia are among the universities that provide e-book services in their campus libraries. Newly opened Kuala Lumpur Library has also purchased and subscribed to e-books, while other institutions such as the National Library provides e-books services, although not on a very large scale (Primalani, 2004).

On the other hand, results from some studies suggest that involvement with computers, through the use of electronic content and other new technologies, can promote positive attitudes towards learning and higher achievement among learners (Espinosa & Chen, 2001; McCreary, Ehrich & Lisanti, 2001). Studies also showed that computer-based learning tools lead to significant gains in learners’ performance in reading, mathematics, computer knowledge, and grammar (Shields & Behram, 2000).

Regardless of the vast amount of e-books available and the great potential of e-books in education, findings from Abdullah and Gibb’s (2006) study revealed that majority of the respondents (60%, 823 out of 1372) have never read an e-book. This is inline with the findings of the previous studies by Chu (2003), who reported that 67% of the respondents in the USA have not read an e-book in the past; Gunter (2005), who reported that 51% of the respondents have not read an e-book; Perry (2005), who found that 62% of the respondents from the University of Cambridge have not read an e-book; and Bennett and Landoni (2005), who found that 61% of their respondents in the UK are not e-book users.

Furthermore, results from Anuradha and Usha’s (2005) study at Indian Institute of Science, India, revealed that 64.4% of the respondents have not used the free trial offer from Kluwer and Edutech eBooks. However, among the survey respondents, 59.4% have read e-books at some point.

Similarly, findings from Ismail and Zainab’s (2005) study revealed that the e-book usage among undergraduate students in Malaysia is still low. There are 60.7% of the students who have not read an e-book before the survey. It is surprising because a majority of the respondents are Internet users whom rated themselves as skilled in Internet applications and possessed a positive attitude towards the e-book service provided by their university library. With regards to the advantages of an e-book, why is the e-book usage still so low?

The purpose of this study is to explore the students’ usage and acceptance of e-books, in spite of the claims that the uptake of ebooks has been slow (Cox, 2004; Ismail and Zainab, 2005), even though information technology is moving at a fast pace. It extends from Ismail and Zainab’s (2005) study, which reveals the pattern of e-book use among undergraduate students in Malaysia, by extending the coverage to a private university in Malaysia, specifically Multimedia University (MMU). The focus of this study is to gauge the perception and acceptance level of ebooks among university students in Malaysia. By having an overall picture and better understanding of their exposure and experience in using e-books, the researchers hope to collect some information on how to improve e-book usage among the target group.

## 2.0 METHODOLOGY

This study employs the questionnaire approach. A mixture of pre-formulated response item set and open-ended format set are selected for the questionnaire to reduce the respondents' load in answering the questions, yet minimize bias introduced by pre-formulated response item set.

The data collection is obtained from primary source, where the researchers gathered data from individual respondents via online survey, in both controlled and uncontrolled settings. Some of the MMU students are invited to participate in the study in the computer lab under close monitoring of the researchers; and some are requested to access the Uniform Resource Locator (URL) forwarded by the researchers via e-mail, and complete the online questionnaire without the presence of the researchers. This is due to the difficulty in booking a computer lab and getting the students to the computer lab at a specific time out of their packed schedules. Nonetheless, clear instructions are given in text to the students to avoid bias.

Descriptive statistics, specifically the frequency distributions, are used to explore and summarize the data collected. Additionally, the Chi-Square test for independence or relatedness is applied to analyze the relationship between two categorical variables, such as a relationship between gender and ebook usage. On the other hand, the responses to the open-ended questions are compiled and analyzed manually. All original wordings from the respondents are retained.

## 3.0 FINDINGS AND DISCUSSIONS

The sample of this study is constituted of 86 MMU students, where 42 are females and 44 are males. 65.1% of the respondents fall within the 17-21 years age bracket, 24.3% between 22-26 years old, 9.3% between 27-31 years old and 1.2% over 31 years old. Out of these respondents, 66.3% are undergraduate students and 33.7% are postgraduate students.

### 3.1 Understanding of An E-book

When enquired about their understanding of an e-book through the question "Are you familiar with the term "electronic book (e-book)?" 51.2% of the respondents answered "Yes" to indicate they know what an e-book is and 48.8% of the respondents answered "No" to indicate they do not know or are not sure of what an e-book is. The questionnaire counter checked on their understanding by asking them to list down their definition. Some of the definitions provided are as such. "book in digital form", "books in digital format that are read on screen", "books in digital form, usually viewed on a computer (desktop, laptop, tablet etc.)", "books that are published on the web or other softcopy format", "a book that is online or on a computer instead of the

traditional paper-bound one", "softcopy of books available online to be accessed and downloaded" and "that kind of book that we can read in digital form for example on computers or even on mobile phones".

The definitions provided by the respondents match the definitions provided by Cambridge Dictionaries Online (2007) and Henke (2001). Therefore, it is confirmed that the respondents understand the meaning of e-book.

### 3.2 Current State of E-book Usage

As shown in Figure 1, 52.3% of the respondents have used e-books prior to the survey. This indicates 13.0% increment in e-book usage among university students in Malaysia, as compared to the earlier study conducted by Ismail and Zainab (2005), where only 39.3% of the respondents have used e-books prior to the survey. It is quite apparent that e-book usage among university students in Malaysia is still not encouraging, even though this user group has relatively high exposure to computers and technology. Hence, factors that encourage the usage of e-books, as well as factors that hinder the adoption of e-books have to be identified, so that actions can be taken to foster the acceptance and usage of e-books among the students.

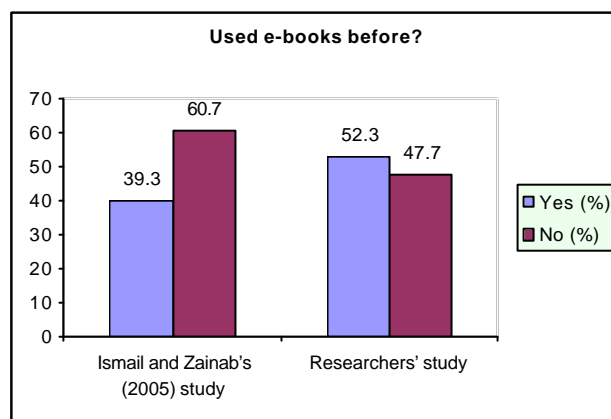


Figure 1: Used e-books before?

### 3.3 Factors that Hinder the Interests of Reading E-book

This study reveals that a majority of the students are not only unaware of the availability of e-books in their library but when e-books are also recommended to them, they show resistance in reading them. In general, factors that hinder the interests of reading e-books can be categorized into two aspects, which are hardware and onscreen design.

48.9% of the respondents who have read e-books available in the campus library and refuse to read such e-books in the future pointed that the main factor that hinders the interest of reading e-books is the troubles in installing a specific reader. This is followed by 27.9% of

the respondents who commented it is difficult to read from a computer screen because they feel reading for too long on a computer is tiring and makes them lose concentration. Other factors that are related to the hardware aspect are troubles in downloading the e-books and slow loading speed (Table 1).

On the onscreen design aspect, 11.6% of the respondents commented it is difficult to navigate through the e-books, followed by 4.7% who commented it is difficult to skim/scan from the e-books and 2.3% who commented it is difficult to find the relevant information (Table 1).

Table 1: Factors that hinder the interest of reading e-books

Aspect	Descriptions	<i>f</i>	%
Hardware	Troubles in installing a specific reader	21	48.9
	Difficult to read from a computer screen	12	27.9
	Troubles in downloading the e-book	1	2.3
	The loading speed is slow	1	2.3
Onscreen design	Difficult to navigate through the e-book	5	11.6
	Difficult to skim/scan from the e-book	2	4.7
	Difficult to find the relevant information	1	2.3

### 3.4 Relationships between Demographics and E-book Usage

In order to examine whether the students' demographics have an influence on the uptake of e-books, cross-tabulations and Chi-Square tests are applied to analyze the relationship between the students' demographics and the e-book usage.

Table 2 shows that there is no significant relationship between gender and e-book usage ( $p=0.199$ ), even though in general more male students (59.1%) have used e-books than female students (45.2%). This is inline with Ismail and Zainab's (2005) findings on students from public university in Malaysia, specifically University of Malaya.

Table 2: Gender and e-book usage

Gender	Used e-books before	
	Yes	No
Female Count	19	23
% within Female	45.2	54.8
Male Count	26	18
% within Male	59.1	40.9

$\chi^2=1.653$ ,  $df=1$ ,  $p=0.199$  ( $>0.05$ )

Results also reveal that all respondents who have rated themselves as expert computer users know what an e-book is. In contrast, only 10.0% of the respondents who have claimed themselves as novice computer users know what an e-book is, and 85.0% of them have never used e-books (Table 3 & Table 4).

In addition, Table 4 shows that there is a significant relationship between computer skill and e-book usage ( $p=0.001$ ), and a majority of the students with intermediate and expert computer skill are e-book users. This shows that students who are more computer literate are more likely to use e-books. This is mainly because novice computer users have problem in installing a specific reader for reading the e-books and they are not used to reading on a computer screen.

Table 3: Computer skill and e-book definition

Computer skill	E-book definition	
	Yes	No
Novice Count	2	18
% within Novice	10.0	90.0
Intermediate Count	32	24
% within Intermediate	57.1	42.9
Expert Count	10	0
% within Expert	100.0	0.0

Table 4: Computer skill and e-book usage

Computer skill	Used e-books before	
	Yes	No
Novice Count	3	17
% within Novice	15.0	85.0
Intermediate Count	36	20
% within Intermediate	64.3	35.7
Expert Count	6	4
% within Expert	60.0	40.0

$\chi^2=14.617$ ,  $df=2$ ,  $p=0.001$  ( $<0.05$ )

Furthermore, as shown in Table 5, there is a significant relationship between academic level and e-book usage ( $p=0.000$ ). Majority of the postgraduate students (82.8%) are e-book users, however only 36.8% of the undergraduate students have used ebooks in the past. This is probably due to postgraduate students having higher exposure to electronic resources, as many of the research papers and references are available in electronic format. Thus, the lecturers should encourage the undergraduate students to use higher level references, such as journal papers, as a step to expose them to electronic resources.

Table 5: Academic level and e-book usage

Academic level	Used e-books before	
	Yes	No
Undergraduate Count	21	36
% within Undergraduate	36.8	63.2

Postgraduate	Count	24	5
% within Postgraduate		82.8	17.2

$\chi^2=16.245$ ,  $df=1$ ,  $p=0.000$  ( $<0.05$ )

Results also reveal that there is no significant relationship between frequency of reading academic-related materials online and e-book usage ( $p=0.097$ , Table 6), even though it is presumed that the more frequently the students read academic-related materials online, the more likely they use e-books. Nonetheless, as shown in Table 6, majority of the students who read an academic-related material online daily are e-book users.

Table 6: Frequency of reading academic-related materials online and e-book usage

Frequency of reading academic-related materials online		Used e-book before	
		Yes	No
Daily	Count	17	7
% within Daily		70.8	29.2
Weekly	Count	15	15
% within Weekly		50.0	50.0
Monthly	Count	10	11
% within Monthly		47.6	52.4
Rarely	Count	3	8
% within Rarely		27.3	72.7

$\chi^2=6.315$ ,  $df=3$ ,  $p=0.097$  ( $>0.05$ )

### 3.5 Commonly Used E-book Format

Additionally, this study has also investigated on the users' preferences of ebook format. Results show that 41.4% of the e-book users read e-book in PDF format, followed by 29.9% who read e-book in HTML format, 12.6% read it in image files format, 9.3% read it in ExeBook format, 3.4% read it in LIT format, and 3.4% read it in other formats (Figure 2).

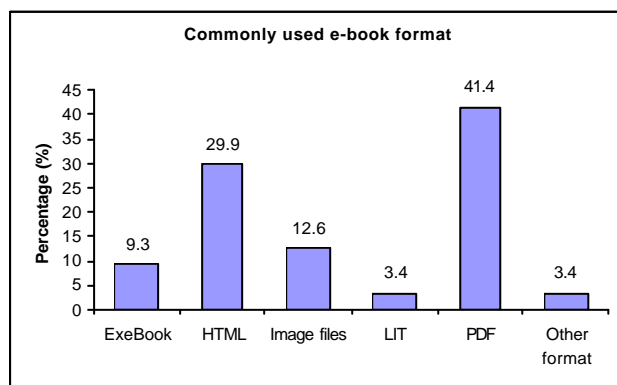


Figure 2: Commonly used e-book format (the respondents are allowed to choose more than one format)

This is parallel with the descriptive data that the most popular journal formats are HTML and PDF format (Hitchcock at el., 1997; Norshuhada at el., 2003). This could be due to Adobe Reader software being commonly

used among MMU students, in addition to the wide circulation and adoption of e-books in HTML and PDF formats. Therefore, the campus library should subscribe to e-book providers that offer e-books in these commonly used formats, instead of the e-book formats that require special plug-in, so that the students, especially those who are novice computer users, will not lose their interest in reading e-books.

Moreover, it is rather surprising to find out that only as low as 3.4% of the ebook users have read ebooks in LIT format, despite the prediction of possible transition to LIT format in the future (Norshuhada et al., 2003). In regards to this, this opens a path for further research in investigating the reasons why university students in Malaysia do not read e-books in LIT format as expected.

### 3.6 Most Preferred Reading Devices

About 64.4% of the e-book users have noted their preferences to reading e-books on a desktop computer (PC). This is followed by 22.2% e-book users who prefer to read from a notebook, 6.7% who prefer to read on a cell phone, 4.4% who prefer to read on a personal digital device (PDA), and 2.3% who prefer to read on other devices, which are not listed here (Figure 3). The reason that PDA and cell phones are not in favor is due to the limitations of their small display screen that makes it hard to read and navigate (Catherine & Christine, 2002; Kukulska-Hulme & Waycott, 2003).

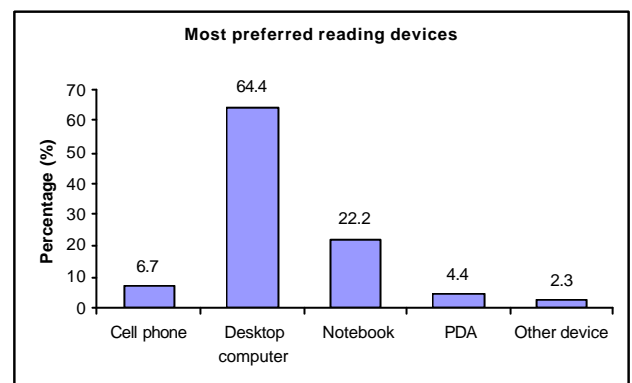


Figure 3: Most preferred reading devices (only e-book users are required to answer this question)

## 4.0 CONCLUSIONS

This study has not only revealed that the usage of e-books among university students in Malaysia is still not encouraging, but it has also given an overall picture and better understanding of the students' expectation on e-book usability from the perspectives of hardware and onscreen design. The areas highlighted in this paper should be considered by any e-book designers so that it could convince and encourage the use of e-books.

Although the sample size for this study is relatively small but the responses from the entire population of tertiary institutions have been quite definite. It is also of

importance to investigate the factors that may lead to the uptake of e-book among university students. Among these, the university library and the academicians play important roles in cultivating and promoting the use of e-book among the university students. Most important of all, the design of e-books should conform to some sound guidelines, to increase reading comfort and the users' subjective satisfaction.

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